



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,726	12/20/2001	David W. Sherrer	A1148.0000/P004	5583

110 7590 12/15/2003

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER

KNAUSS, SCOTT A

ART UNIT	PAPER NUMBER
----------	--------------

2874

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,726

Applicant(s)

SHERRER ET AL.

Examiner

Scott A Knauss

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Prior for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) 20-28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 9 is/are rejected.
- 7) ☐ Claim(s) 5, 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, drawn to an optical switch, classified in class 385, subclass 16.
 - II. Claims 20-28, drawn to a method of assembling a switch, classified in class 385, subclass 147.

The inventions are distinct, each from the other because of the following reasons:

Inventions and I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the switch of claim I could be made from a process distinct from the process of group II, and the process of group II could be used to fabricate a switch different from the switch of group I.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Niels Haun on 11/21/03 a provisional election was made without traverse to prosecute the invention of group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action.

Art Unit: 2874

Claims 20-28 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The applicant is also reminded that, prior to allowance of the present application, all non-elected claims must be cancelled.

Information Disclosure Statements

2. The references cited in the IDS's submitted by the applicant have been considered by the examiner.

Claim Objections

3. Claims 7 and 8 are objected to because of the following informalities: Claims 7 and 8 recite the limitation "said chips" which lacks proper antecedent basis because no claim on which claims 7 and 8 depend recites these chips. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 476241 (Roeckle et al).

Regarding claim 1, Roeckle discloses in figs. 1-7 an optical switch comprising:
first and second optical arrays (#13,#14) separated by an interface; and
a support structure upon which said optical arrays are mounted (fig. 1),
the support structure including an area (#8) which has a flexing profile that differs from the remainder of said support structure, wherein the operation of force on said support structure serves to optically couple and de-couple said optical arrays (fig. 3)

Regarding claim 2, Roeckle further discloses in fig. 7 the first array having a first chip (panel #31) and a first optical fiber (#13,#14), and said second optical array includes a second chip and a second optical fiber, the first and second chips being mounted on said support structure.

Regarding claim 3, Roeckle further discloses the chips including a v-groove to secure the fibers (see translation, page 8, line 2)

6. Claims 1,4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 3927441 (Eicher et al).

Regarding claim 1, Eicher discloses in fig. 1 an optical switch comprising:
first and second optical arrays (#8) separated by an interface; and
a support structure upon which said optical arrays are mounted (#12,#15,#16),
the support structure including an area (#17) which has a flexing profile that differs from the remainder of said support structure, wherein the operation of force on said support structure serves to optically couple and de-couple said optical arrays

Regarding claim 4, since the support structure is flat and flexes, the examiner believes it can be considered a flex plate, having a flexing area #17 which is a trench.

Regarding claim 6, the side walls of the trench are smooth..

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eicher et al.

Regarding claim 9, Eicher discloses the limitations of claims 1 and 4 as set forth above, but does not disclose an etch stop layer.

Nevertheless, in forming grooves in a flat surface, it is well known to use etching to form the grooves, and further, to use an etch stop layer to ensure the surface is

etched to the correct depth. Therefore the examiner submits it would have been obvious to one of ordinary skill in the art to use an etch stop layer in the device of Eicher for the purpose of etching the trenches to the correct depth.

Allowable Subject Matter

10. Claims 10-19 are allowed. Prior art fails to disclose first, second and third optical arrays being mounted on a support structure, the third interposed between the other two, the first and third being separated by an interface, the second and third being separated by an interface, and the support structure including a pair of areas with a flexing profile that differs from the rest of the support structure, and further having a fourth array being positioned transverse to the first and third arrays in the vicinity of the first interface, and a fifth array being positioned transverse to the second and third arrays in the vicinity of the second interface.

11. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 5, the prior art fails to disclose the arrays being mounted on the flex plate with the trench beneath the interface between them.

12. Claims 7 and 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the objections set forth above.

Regarding claim 7 in particular, the prior art fails to teach or suggest a switch as set forth in claims 1 and 4, wherein the chips and the flex plate have a grooves which mate with each other via a plurality of spheres positioned within the grooves.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 5,727,099 and 5,757,991 (Harman), and US 6625356 (Ticknor et al) disclose additional switches utilizing flexible supports.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss
sak

Art Unit 2874


HIMANG SANCHANI
RECEIVED 11/13/13